

REMARKS

Claims 1-4, 6-9 and 11-17 are pending. Claims 1-4, 6-9 and 11-17 are rejected. Claim 3 has been cancelled. Claims 1, 2, 4, 6-9 and 11-17 remain in the case for reconsideration. Reconsideration is requested. No new subject matter has been added.

Claims 1-3, 9, and 11 are rejected under 35 USC 103(a) as being unpatentable over Mietling (US Patent No. 6,385,322) in view of Bridges (US Patent No. 4,751,464). Claims 4 and 15-17 are rejected under 35 USC 103(a) as being unpatentable over Mietling in view of Bridges and in further view of Konno et al. (US Patent No. 6,282,296). Claims 6 and 12 are rejected under 35 USC 103(a) as being unpatentable over Mietling in view of Bridges in further view of Erickson (US Patent No. 4,688,257). Claims 7 and 13 are rejected under 35 USC 103(a) as being unpatentable over Mietling in view of Bridges and in further view of Langston (US Patent No. 6,272,351). Claims 8 and 14 are rejected under 35 USC 103(a) as being unpatentable over Mietling in view of Bridges and in further view of Long et al. (U.S. Patent No. 5,640,385).

1. The communications module specified in claims 1 and 9 is not a cable.

The Examiner has rejected independent claims 1 and 9 under 35 USC 103(a) as being unpatentable over Mietling (US Patent No. 6,385,322) in view of Bridges (US Patent No. 4,751,464). The Examiner acknowledges that Mietling fails to disclose a communications module that has high impedance at frequencies within an audio range of the speaker system. However, the Examiner cites Bridges as disclosing a communications module (cable) that is at high impedance at audio frequencies (column 5, lines 40-45).

Claims 1 and 9 have been amended to clarify that the specified communications module is not a cable as disclosed in Bridges. Specifically claim 1 states: a communication module also located in the speaker enclosure that is also coupled to the audio amplifier through the speaker cables or wireless communication channel and that provides high impedance at frequencies within an audible range of the audio signal independently from any impedance characteristics of the speaker cables or wireless communication channel.

This is clearly shown in FIGS. 1 and 2 where the communications module 28 is shown contained in the speaker enclosure 12 and that is coupled to the amplifier 10 through the connectors 20A and 20B and the cables shown in FIG. 1. The specification at page 4, line 21 also states: "First, the high-pass filter, rectifier and communications module can be designed to

present high impedance at all frequencies within the normal audio range of the speaker system. This prevents any significant load from being placed on the connection, which could significantly impact the speaker characteristics. Essentially, this renders the intelligence components of the speaker system transparent."

Neither Mietling or Bridges suggest a communications module located in the speaker enclosure that is coupled to the audio amplifier through the speaker cables or wireless communication channel and that provides high impedance at frequencies within an audible range of the audio signal independently from any impedance characteristics of the speaker cables or wireless communication channel as specified in claim 1. Mietling does not suggest any high impedance communications module characteristics and Bridges only discusses impedance characteristics for a cable system.

The problem with using the system disclosed in Bridges is that different cables may be used in different sound systems. Therefore, a sound system that uses low impedance cables, or even different types of high impedance cables, may not necessarily eliminate or have any affect on the sound quality problems created by low impedance characteristics of the identification unit circuitry 5 described in Mietling (FIGs. 1-3).

The sound system specified in claim 1 prevents sound quality problems independently of the impedance characteristics of the stereo cables by providing high impedance for the communications module circuitry used by the speaker system. The intelligent communications module specified in claim 1 will not disrupt sound quality of an audio signal regardless of the type of speaker cabling used for connecting the speaker system to the amplifier.

2. *The communication module specified in claims 1, 11, and 17 automatically starts sending speaker characterization data to the amplifier when powered on without having to receive other control signaling from the amplifier.*

Claim 1 specifies the communication module solely in response to being powered on by a power signal received from the audio amplifier, and without further communication signaling from the amplifier, automatically generating signals that identify electrical speaker characteristics for the speaker in the speaker enclosure.

This is clearly described in FIG. 3 where as soon as the power carrier signal is present in operation 32, the communication module transmits speaker characteristics from the speaker

system to the amplifier in operation 34. This is further described in the specification as follows: Communication module 28, upon receiving power, will start transmitting through the speaker connections 20a and 20b . . . The communication module 28 will continue to transmit so long as there is a carrier signal. When the amplifier has received the information, it can shut down communications by dropping the carrier signal. Without the power derived from the carrier signal, the communication module shuts down. Page 3, line 28 –page 4, line 9.

Conversely, the system identification unit 5 in Mietling does not automatically send speaker characteristics back to the power amplifier solely upon being powered on by the amplifier. The system in Mietling requires both the power amplifier 2 and the loudspeaker box 4 to conduct a particular handshaking protocol. For example, Mietling always requires the amplifier 2 to first power up the speaker and then send a prompt signal to cause the identification unit 5 to send back configuration data.

This is shown in block 14 in FIG. 4 and described in the specification as follows: “The data transmission path 9 is equipped with double arrows which indicates that a data exchange occurs, in particular, this data exchange occurs between the configuration circuit 3 and the memory unit 6.” Col. 4, lines 36-39. “Next, a queuing operation occurs, that is, the identification unit 5 is ready for reception and waits for communications prompt from the configuration circuit 3 of the power amplifier.” Col. 4, line 67-col. 5, line 3.

The communication module as specified in claims 1, 11, and 17 automatically generates signals that identify electrical speaker characteristics for the speaker solely in response to being powered on by a power signal received from the audio amplifier, and without further communication signaling from the amplifier.

The simple communication scheme used by the communication module as specified in claims 1, 11, and 17 is less expensive to manufacture and can therefore be used even in low-end speakers. The automatic power-on communication module response will also work in a wider variety of different stereo system configurations. In other words, as long as power is supplied to the speaker, the amplifier can receive the speaker configuration parameters. The amplifier does not have to generate different electrical prompt messages that may be required for each different speaker manufacturer.

3. *The Communications module in claims 6, 12, and 15 use phase-shift keying to communicate stereo configuration parameters back to the amplifier.*

Claims 6, 12 and 15 specify the communications module using phase-shift keying to communicate the stereo configuration parameters back to the amplifier. This phase shifting communication technique is not suggested in any of the prior cited by the Examiner. Claim 2 also specifies using two-tone modulation scheme for communicating the stereo configuration parameters back to the amplifier. This two-tone technique is also not suggested in any of the cited prior art. The phase-shift keying or the two-tone modulation may provide a signaling scheme that is less disruptive of the audio signaling than other modulation schemes.

4. *U.S. Patent 6,272,351 to Langston does not suggest sending electrical speaker characteristics to an amplifier in a separate frequency band from the audio signal as specified in claims 7 and 13.*

The Examiner cites Langston as disclosing transmitting data in a separate frequency band from another signal. However, Langston does not suggest transmitting data in a separate frequency band from an audio signal as specified in claims 7 and 13. The transmission scheme specified in claims 7 and 13 prevents interference between an audio signal sent by the amplifier and the speaker information sent by the communications module back to the amplifier.

Langston does not relate to audio systems as described in claims 7 and 13. Conversely, Langston relates to sending data between a base station and a node (col. 1, lines 30-52) in a telephone system. Therefore, there would be no motivation to combine the stereo system of Mietling with the wireless telephone system described in Langston. Regardless, there is no suggestion in Langston at col. 3, lines 25-30 of transmitting audio data and electrical speaker characteristics between an amplifier and a speaker.

Further, as described above, Mietling uses a prompting protocol that directs the speaker system to send speaker information back to the amplifier. This prompting protocol would prevent overlap of audio data with information containing speaker characteristics. Therefore, there is no motivation in Mietling to use non-overlapping frequency bands as defined in claims 7 and 13 or any of the transmission configurations shown in Langston.

Previous arguments made by Applicant in the earlier office action responses are herein incorporated by reference.

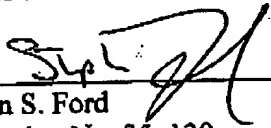
Conclusion

For the foregoing reasons, reconsideration and allowance of claims 1, 2, 4, 6-9 and 11-17 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

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Respectfully submitted,

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